



California Regional Water Quality Control Board

Santa Ana Region



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CLEAN WATER ACT SECTION 401 WATER QUALITY STANDARDS CERTIFICATION FOR THE HERITAGE FIELDS AND THE GREAT PARK IMPROVEMENT PROJECTS, CITY OF IRVINE (ACOE REFERENCE NO. 200601452- CJF)

Dear Mr. Werkmeister and Mr. Worthington:

On July 14, 2006, we received an application for Clean Water Act Section 401 Water Quality Standards Certification (Certification), submitted on your behalf by PCR Services Corporation, for the proposed Heritage Fields and The Great Park development projects at the former El Toro Marine Corps Air Station in the City of Irvine. In the application for Certification, the Orange County Great Park Corporation, the City of Irvine, and Heritage Fields El Toro, LLC are identified as co-applicants. This letter responds to your request for certification that the proposed project, described in your application and summarized below, will comply with State water quality standards outlined in the Water Quality Control Plan for the Santa Ana River Basin (1995) and subsequent Basin Plan amendments:

Project Description: Reuse and development of portions the former El Toro Marine Corps Air Station (MCAS) within the City of Irvine. The project consists of 3,580 acres, or 5.6 square miles. The development of the property will be completed by separate entities. The Great Park Corporation and City of Irvine will develop the central portion of the site known as The Orange County Great Park (The Park), which consists of approximately 1,200 acres and includes open space and recreational uses, an approximately 175-acre Wildlife Corridor, and restored Agua Chinon and Serrano Creek drainages. Heritage Fields El Toro, LLC will develop approximately 2,260 acres of the project site, consisting of three separate districts surrounding The Park. The project consists of the land uses described in Table 1 below.

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Mass grading of large portions of the site will occur in phases along with corresponding demolition of the approximately 500 structures on the former military installation, including the demolition and recycling of portions of the concrete runways, taxiways, and other similar airfield components. The project site is located in Sections 104, 141, 154, and 155 of Township 6 South, Range 8 West, of the U.S. Geological Survey *El Toro, California*, 7.5-minute topographic quadrangle map (33.6721 degrees N/-117.7284 degrees W).

Table 1: Proposed Land Uses

Land Use	Approximate Acreage
park, open space, and recreation (The Orange County Great Park)	1,200
mixed use, residential, commercial, educational (Lifelong Learning District)	950
residential, park (Park District)	470
golf course (Park District)	380
mixed use, residential, commercial, and research & development (Transit Oriented Development District)	360
roads and other infrastructure	220
Total	3,580

Receiving water: Agua Chinon Wash and its on-site tributaries; Bee Canyon Wash and its on-site tributaries; Borrego Canyon Wash and its on-site tributaries; Serrano Creek and its on-site tributaries; a segment of San Diego Creek and its on-site tributaries; and three un-named drainages.

Fill area: 3.34 acres of permanent impact to ephemeral drainages; 1.66 acres of permanent impact to wetlands; and 5.27 acres of temporary impact to ephemeral drainages (32,988 linear feet).

Dredge/Fill volume: N/A



Federal permit: U.S. Army Corps of Engineers Individual Permit No.
200601452.

Currently, the proposed project has been incorporated into the City of Irvine's General Plan and zoned and is in the concept design phase. Project-level planning and design for specific development projects have not yet been proposed, but impact areas, general land uses, and backbone infrastructure have been identified. Certifications are often issued on the basis of more specific development project information (e.g. a lotted Tract or Parcel Map) and review of a Water Quality Management Plan (WQMP) detailing various storm water treatment facilities. In this case, the spatial extent of the project is large and the project has an extended temporal component, with a projected build-out in the year 2025. Due to the spatial and temporal magnitude of the project, it is not feasible for Regional Board staff to undertake a detailed review of water quality treatment facilities typically done for purposes of Certification.

The proposed project will be subject to various other subsequent discretionary approvals by the City of Irvine, a permittee under Regional Board Order No. R8-2002-0010, National Pollution Discharge Elimination System (NPDES) Permit No. CAS618030 (Order No. R8-2002-0010) which addresses urban storm water runoff. The City of Irvine is required, in part, to require structural storm water treatment facilities on new development and significant redevelopment subject to their discretionary approval. Regional Board staff anticipates that the current requirements under Order No. R8-2002-0010 for structural storm water treatment facilities will be continued in subsequent renewals of this NPDES permit for the foreseeable future. Compliance with Order No. R8-2002-0010, and subsequent renewals, will provide the necessary detailed review for structural storm water treatment facilities for the proposed project.

For the purposes of Regional Board staff review for Certification, an Integrated Master Plan of Drainage, Water Quality, and Habitat Mitigation (Integrated Master Plan) has been developed as part of the application for Certification in lieu of reviewing WQMPs for subsequent projects. The Integrated Master Plan is a preliminary WQMP that describes the proposed storm water treatment facilities in a generalized manner and beneficial use mitigation for the whole of the project on a conceptual level. The Integrated Master Plan provides the engineering design basis for the areas where beneficial use mitigation will occur: Bee Canyon drainage, Agua Chinon, and a created drainage in the Wildlife Corridor. The City of Irvine will condition future discretionary approvals issued for the project to comply with the Integrated Master Plan. Subsequent project WQMPs will be developed consistent with the Integrated Master Plan.

Regional Board staff believes that, for a project of this size and planning scale, it is appropriate to consider treatment facilities and compensatory beneficial use impact mitigation at a more conceptual level via the Integrated Master Plan, and rely on more detailed design review conducted later by City of Irvine staff for consistency with the Integrated Master Plan, and according to Order No. R8-2002-0010. Review and Certification of the project at a more detailed level could occur for various components of the project as design details are developed later with subsequent phases of development. However, the review would likely occur in a piecemeal fashion. Consequently, the ability of both Regional Board staff and City staff to address the



cumulative water quality impacts of the project could be significantly limited. The development of the Integrated Master Plan addresses this problem by providing a cohesive strategy to mitigate water quality impacts. The combination of the Integrated Master Plan, and the City of Irvine's future approval of project-level WQMPs in compliance with Order No. R8-2002-0010 and subsequent renewals of the municipal urban storm water runoff permit, is an adequate basis for the issuance of this Certification.

The Integrated Master Plan proposes the following features to mitigate water quality impacts summarized below:

- A. Bee Canyon Channel currently exists as an alternating series of underground storm drains and open channels. Flows north of Irvine Boulevard have been diverted into Marshburn Retarding Basin, then to Marshburn Channel, as part of the development of Planning Area 6 to the north. This has reduced its tributary area and diminished its flows on the project site. Bee Canyon Channel will be developed into a series of bio-swales, earthen drainage channels, and natural treatment systems integrated into park land uses.
- B. Agua Chinon Channel also currently exists as an alternating series of underground storm drains and open channels. The majority of the Agua Chinon Channel will be developed into a vegetated, soft-bottom flood control channel (Reaches 2 – 4), and Reach 1 of the Channel will be rip rap-lined for flood control purposes. The new Channel will consist of a meandering active channel approximately 7,300 feet in length, nested within an engineered terraced floodplain providing varied habitat, wetlands, mitigation, flood control, recreational, multi-use trail and parkland uses throughout. The proposed Channel will average 450 feet in width, with an average floodplain width of 200 feet in the upstream portion and 300 feet in the downstream portion. The Channel's hydraulic capacity will be designed to accommodate anticipated mature, un-maintained vegetation densities. Multi-use trails and parklands will be included within the floodplain along the Channel, with buffer areas between the recreational uses and the Channel for additional protection. In order to protect existing landfills south of Irvine Boulevard, the Channel will be constricted and armored at this location. The total footprint of the Channel will be approximately 90-acres. Pursuant to the Conceptual Habitat Mitigation and Monitoring Plan for the Heritage Fields/The Great Park project, approved by the Army Corps of Engineers, several riparian habitat, wetlands and marshlands will be incorporated into the design to enhance wildlife habitat beneficial uses and pollutant attenuation. In addition, water quality treatment facilities will be located within the buffer areas outside of the 100-year floodplain to treat runoff discharges from the adjacent developed areas prior to entering the Channel. A series of drop structures will be necessary in order to maintain channel stability, and regular maintenance will be performed in flood control areas throughout the Channel to maintain functionality and hydraulic capacity to prevent hydro-modification.
- C. Borrego Canyon Wash currently exists primarily as a concrete trapezoidal channel through the project site. A vegetated, low flow drainage channel will be created in the vicinity of the current channel in conjunction with a Wildlife Corridor



extending the length of the project. This will involve diverting flows of up to approximately 1,700 cubic feet per second (cfs), under the 100-year peak flow event, from Borrego Canyon Wash at the upstream end of the property into the Wildlife Corridor channel. Higher flows will bypass the channel and remain within the existing Borrego Canyon Wash flood control facility. Additional local tributary drainage areas will provide treated urban runoff into the Wildlife Corridor. The combination of diverted flows from Borrego Canyon Wash and adjacent development will result in peak 100-year flows up to 2,400 cfs for this portion of the Corridor. Similar to the proposed Agua Chinon Channel, the Wildlife Corridor will feature an active channel nested within an engineered terraced floodplain and drop structures to maintain channel stability. The Channel's hydraulic capacity will be designed to accommodate anticipated mature, un-maintained vegetation densities. To maintain hydrologic and hydraulic functionality, the majority of flows from the Corridor will be returned back to the existing Borrego Canyon flood control facility near Marine Way. The proposed Corridor will then continue south and join with Serrano Creek. Serrano Creek will be modified as described below. The Wildlife Corridor will be designed to provide a habitat linkage between the mountains and coastal regions of south Orange County and will provide habitat mitigation banking opportunities for other projects. Due to the flood control capacity of the trapezoidal channel, regular maintenance for flood control purposes will not be needed within the Wildlife Corridor low-flow channel.

- D. Serrano Creek Channel will be restored in place to serve as an extension of the Wildlife Corridor, and will be designed to accommodate up to the peak 100-year event of approximately 5,000 cfs. Serrano Creek has been hydraulically degraded as the result of hydro-modification caused by development in its tributary area. The restoration effort will include widening the channel bottom and laying back the slopes of the Channel to create a stable channel profile.
- E. The Heritage Fields portions of the project will feature approximately eight regional extended detention basin/natural treatment storm water runoff treatment facilities, and two such regional water quality facilities are planned in the Orange County Great Park. These facilities have been conceptually sized in order to determine their approximate footprint for consideration along with other project elements. The facilities will serve one or more subsequent development projects within the El Toro MCAS project area and will be engineered according to applicable NPDES permit sizing criteria. Their preliminary sizing is based on an assumption of no previous treatment by upstream projects.
- F. Regional extended detention basin/natural treatment water quality facilities will be largely located outside of the floodplains of the reconstructed channels, with one exception. A constriction in the culvert under the Interstate 5 at Serrano Creek will create a backwater effect that may inundate treatment facilities located therein as the result of larger storm events. However, dikes will be incorporated into the design to minimize backwaters from entering the facility. During future design phases, the location and number of these regional facilities may change based on changes in grading, storm drain alignments and other engineering constraints and opportunities. Any future facilities will be designed and located in accordance with the standards set forth in the Integrated Master Plan, applicable



NPDES permit and DAMP sizing criteria and requirements, and located outside of the 100-year floodplain.

- G. Interior development projects, or projects that have been designed with sufficient detail for construction, will implement "low-impact development" techniques. These include pocket rain gardens within impervious areas, porous/permeable paving integrated into traditional paved areas, landscape storm water planters, and cisterns for capturing rainwater for re-use. The details of these practices will be described in future, project-specific WQMPs.
- H. "Green street elements" will be utilized within the El Toro MCAS project areas for a variety of streets as feasible. Examples include inverted medians, curb-less edges, bio-swales, and infiltration zones in landscape setback areas for a variety of different sized streets within the project area.
- I. Drainage within The Great Park itself will rely primarily on drainage swales throughout to convey runoff to downstream regional extended detention basin/natural treatment water quality facilities. The use of traditional sub-surface drainage will be used where swales are infeasible based on site conditions or land use.
- J. Source control, treatment, and site design best management practices (BMPs) will be maintained by one or more of the following entities: the individual homeowner's and commercial business associations for Heritage Fields. The Great Park BMPs will be maintained by maintenance staff working for the City, or an entity of the City, such as a landscape and lighting district, or the Irvine Ranch Water District. It is the intent of the City of Irvine and Heritage Fields El Toro, LLC that Irvine Ranch Water District eventually be responsible for maintaining the regional extended detention basin/natural treatment facilities within Heritage Fields and The Great Park.

Should the proposed project impact state- or federally-listed endangered species or their habitat, implementation of measures identified in consultation with U.S. Fish and Wildlife Service and the California Department of Fish and Game will ensure those impacts are mitigated to an acceptable level. Appropriate Best Management Practices will be implemented to reduce construction-related impacts to Waters of the State according to the requirements of Order No. R8-2002-0010, commonly known as the Orange County Municipal Storm Water Permit. Order No. R8-2002-0010 requires, in part, that the City of Irvine substantially comply with the requirements of State Water Resources Control Board's General Permit for Storm Water Discharges Associated with Construction Activity, Water Quality Order 99-08 DWQ, including the preparation of a SWPPP, for construction activities undertaken by permittees. Construction activities undertaken by other parties will also be addressed by the requirements of the State Water Resources Control Board's General Permit for Storm Water Discharges Associated with Construction Activity, Water Quality Order No. 99-08 DWQ where the activity involves the disturbance of one or more acres of land.

The project will include an extensive concrete demolition and recycling operation. In the event that this operation involves the production of concrete batching or similar



products, the operators may require coverage under State Water Resources Control Board Order No. 97-03-DWQ. NPDES General Permit No. CAS000001, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities, excluding Construction Activities, or subsequent Order.

You have applied for an Individual Permit from the U.S. Army Corps of Engineers in compliance with Section 404 of the Clean Water Act. You have applied for a Streambed Alteration Agreement with the California Department of Fish and Game. Pursuant to the California Environmental Quality Act (CEQA), the City of Irvine certified an Environmental Impact Report (EIR) on May 27, 2003. The Executive Officer has considered the City's EIR in the issuance of this Certification.

It is the understanding of Regional Board staff that the City of Irvine is preparing to issue additional discretionary approvals for land uses within the El Toro MCAS project area. Regional Board staff believes that the City's incorporation into future project discretionary approvals of the Integrated Master Plan as part of the conditions/mitigation measures for water quality, combined with the City's compliance with Order R8-2002-0010, assures that the proposed project will mitigate water quality impacts. Incorporation of water quality conditions and mitigation measures into the CEQA and development review processes is consistent with the requirements of Order No. R8-2002-0010 XII.A.3.

This 401 Certification is contingent upon the execution of the following conditions:

1. Excavation and construction of engineered flow control and channel stabilization structures for the Wildlife Corridor shall occur concurrent with, or precede, grading in that portion of the El Toro MCAS project area that will include the Wildlife Corridor. Flows from Borrego Wash into the Wildlife Corridor are prohibited until all engineered channel stabilization structures there are fully constructed.
2. Discharges diverted from Borrego Wash into the Wildlife Corridor shall be free of sediment in quantities that have the potential to impair the physical and biological integrity of the Wildlife Corridor channel as a result of controllable water quality factors.
3. Construction of engineered channel stabilization structures for the proposed Agua Chinon Channel shall occur immediately following its excavation. Planting, seeding, or other work to vegetate the channel shall be initiated not later than October 31 following completion of the channel stabilization structures. Development of the proposed Agua Chinon Channel shall occur according to an approved mitigation monitoring plan prepared according to U.S. Army Corps of Engineers' (Corps) guidelines. The Corps will provide approval of the mitigation monitoring plan.
4. Structural storm water treatment facilities shall be constructed and operational prior to the occupancy of any residence in their respective tributary areas.
5. Regional Board staff and other authorized representatives shall be allowed:
 - a) Entry upon premises where storm water treatment facilities are located, or where records are kept under the requirements of this Certification;



- b) Access to copy any records that are kept under the requirements of this Certification;
 - c) To inspect any facility, equipment (including monitoring and control equipment), practices, or operations related to the treatment of storm water runoff from the proposed project; and
 - d) To photograph, sample and monitor for the purpose of assuring compliance with this Certification.
6. This Certification and any subsequent amendments shall be maintained on site as a denoted element of any project SWPPP or WQMP.
7. This Certification is valid only for the project as described in your application. Any conflicts between the described project and future descriptions or implementation actions that render the Project inconsistent with the Integrated Master Plan shall invalidate this Certification.

Under California Water Code, Section 1058, and Pursuant to 23 OCR §3860, the following shall be included as conditions of all water quality certification actions:

- a) Every certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section §13330 of the Water Code and Article 6 (commencing with Section 3867) of this Chapter.
- b) Certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to Subsection §3855(b) of this Chapter and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
- c) Certification is conditioned upon total payment of any fee required under this Chapter and owed by the applicant.

Although we anticipate no further regulatory involvement, if the above stated conditions are changed, any of the criteria or conditions as previously described are not met, or new information becomes available that indicates a water quality problem, we may formulate Waste Discharge Requirements.

In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under state law. For purposes of section 401 (d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this certification.

In response to a suspected violation of any condition of this certification, the Santa Ana Regional Water Quality Control Board (Regional Board) may require the holder of any permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the Regional Board deems appropriate. The burden,



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including costs, of the reports shall be reasonable in relation to the need for the reports and the benefits to be obtained from the reports.

In response to any violation of the conditions of this certification, the Regional Board may add to or modify the conditions of this certification as appropriate to ensure compliance. Pursuant to California Code of Regulations Section 3857, we will take no further action on your application. Please notify our office five (5) days before construction begins on this project.

This letter constitutes a Water Quality Standards Certification issued pursuant to Clean Water Act Section 401. I hereby issue an order certifying that any discharge from the referenced project will comply with the applicable provisions of Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003-0017-DWQ (Order No. 2003-0017-DWQ), "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received Water Quality Certification" which requires compliance with all conditions of this Water Quality Standards Certification. Order No. 200-0017-DWQ is available at www.swrcb.ca.gov/r6sijec/wqorders/2003/wqo/wqo2QQ3-0017.pdf

Should there be any questions, please contact Adam Fischer at (951) 320-6363, or Mark Adelson at (951) 782-3234,

Sincerely,



GERARD J. THIBEAULT
Executive Officer

cc: U. S. Army Corps of Engineers, Los Angeles Office - Corice Farrar
State Water Resources Control Board, OCC - Erik Spiess
State Water Resources Control Board, DWQ-Water Quality Certification Unit-
Nancy Dagle
California Department of Fish and Game, Ontario Office - Jeff Brandt U.S. EPA,
Supervisor of the Wetlands Regulatory Office WTR- 8 - Tim Vendlinski

